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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## PRECIOUS METALS IN JULY 1997

U.S. mines produced 28,200 kilograms of gold and 124,000 kilograms of silver in July 1997. Gold production in Nevada, the largest producer, increased about 1% from the previous month. Total gold production in July was up by about 1%. Production of silver was down by about 3% in Nevada and 8% in Arizona while California reported a 5% increase. Total silver production in July was down by about 5%.

### Gold

**Domestic.**—Land near Cooke City, MT, which is on the outskirts of Yellowstone National Park, has been closed to hard rock mining for the next 20 years. The Department of the Interior withdrawal order for 22,065 acres became effective August 19. This decision was based on a comprehensive environmental impact statement released in July that examined potential impacts on surface and ground water, as well as on fish and aquatic life (American Metal Market, 1997).

**International.**—Canada's Barrick Gold Corp. is openly lobbying to capture control of the giant Sukhoi Log gold deposit in southeastern Siberia, according to Russian Government sources. Barrick was cited by the Russian media as needing fresh gold reserves at Sukhoi Log because of the failure at the Busang property (Platt's Metals Week, 1997a).

Senior Russian Government officials halted the issue of "gold credits" to seven of the country's principal gold-mining regions—Buryatia, Sakha, Irkutsk, Krasnoyarsk, Chukotka, Magadan, and Sverdlovsk. These were credits that were to be repaid in gold ingots produced by each region's mines and delivered to the State Precious Metals Fund. These credits had been issued to sustain gold production at the mines. The officials claimed that the credits were abused by three of the regions, which spent the funds for non-mining purposes, and then failed to deliver the required gold (Platt's Metal week, 1997c).

Vaal Reefs and Hartbeestfontein gold mines reached productivity agreements allowing workers to work additional shifts that include some Sundays; no work will be allowed on public holidays. These deals facilitate the much-needed workplace restructuring that will be conducive to increased gold production efficiencies. More than 30,000 workers could arrange for an additional 26 shifts at the Vaal Reefs Mine without increasing individuals' daily work hours (Platt's Metals Week, 1997d).

The Yanacocha Mine, the largest gold mine in Latin America, reported its highest monthly gold production since it began operation in 1993. About 92,000 troy ounces of gold were produced in July. The mine is expected to produce 1 million ounces of gold in 1997 and sustain this million ounce rate for the next 6 or 7 years (Mining Journal, 1997d).

**Update.**—According to Gold Fields Mineral Services, the global industry's total production cost for gold averaged \$317 per ounce in 1996. This figure does not include the cost of discovering gold, which has been calculated by Robert Davies of ING Barings, London, as \$57 per ounce. Hence, the average cost to find and recover gold in 1996 was \$374 per ounce. Considering that the average London gold price was \$389 per ounce in 1996, profit margins last year were lean (Mining Journal, 1997a).

The West Australian Government Court has offered the State's gold miners some respite on gold royalties. The first phase of the royalties on gold production has been delayed by 9 months, and the 1.25% flat charge on production will be levied next July instead of this October. In addition, the threshold for exemption from payment of the royalty has been raised from 1,000 ounces of gold per year to 2,500 ounces. Full royalties of 2.5% will be effective July 1, 2000—a 12-month deferral. The Government has also promised that the higher rate will be applicable only if the gold price is more than A\$435 per ounce (Metal Bulletin, 1997c).

According to the People's Bank of China, their country will not follow Europe and Australia in selling gold, because it needs to stabilize its reserves for emergency use and for help repaying international debts (Platt's Metals Week, 1997b).

## Silver

**Solar Power May Increase Demand for Silver.**—About 950,000 ounces of silver was consumed worldwide in solar cells in 1996. The demand for solar cells could expand substantially, however, fueled by the alternative energy initiative that is currently under consideration by the U.S. Department of Energy. If all goes as expected, the silver market should feel the impact over the next decade.

World production of power from solar cells in 1996 was about 90 MW. Production was led by the United States, which accounted for 44% of 1996 output, with Japan responsible for 24% and Europe for 21%. Silver use in those markets was approximately 422,000 ounces, 225,000 ounces, and 200,000 ounces, respectively, according to estimates by engineers at solar cell manufacturers and experts at the U.S. Department of Energy. U.S. demand for solar cells has been growing at 14% per year. In addition, the U.S. initiative proposes to equip 1 million rooftops with solar cells by 2007, which would equate to a U.S. solar cell demand growth rate of about 23% annually with total consumption of more than 30 million ounces of silver over the next decade (Metal Bulletin, 1997b).

**New Tender for Russia's Dukat Silver.**—A new tender for Dukat, Russia's largest known silver deposit, is planned for later this year, according to the Governor of the Magadan Region. The Governor announced the plan to offer a 49% interest in the project for tender, subject to the permission of the Federal Government. The Dukat deposit was previously offered for tender in April of this year and a Canadian company, Pan American Silver, announced that it had won the right to acquire an interest of up to 66%. According to Pan American, Dukat has resources totaling 26 million tons, at a grade of 580 grams of silver per ton. The operation recently produced 3 to 5 million ounces of silver in concentrate, which was smelted at Cominco's Trail facility, in British Columbia. Pan American planned to modernize the underground operations, to produce 14 million ounces of silver and 25,000 ounces per year of gold by 2000, but withdrew from the transaction in May. A 49% interest in the project was then awarded to another bidder in the original tender. That deal failed to materialize, and the project is once more open to bidders (Mining Journal, 1997b).

## Platinum-Group Metals

Ruthenium and iridium prices have risen, with traders

reporting a recovery in these markets. On July 23, ruthenium traded at \$35-\$37 per ounce, up from \$34-\$36, while iridium rose to around \$155-\$165 per ounce, up from \$150-\$160. However, rhodium prices have fallen further, with the market trading in the range \$295-\$310 per ounce on July 23, down from \$350-\$360 previously. Meanwhile, spot palladium traded up at around \$201-\$203 per ounce on July 23, while spot platinum traded up at \$415-\$418 per troy ounce (Metal Bulletin, 1997a).

**Russia Ships PGM.**—Russian shipments of platinum-group metals resumed during the week of July 14, 1997, after a 6-month gap. However, platinum and palladium, the two metals most affected, have held on to most of the gain in prices that were made during the supply interruption. Platinum was being traded as high as \$510 per ounce in the middle of June when the squeeze owing to the lack of Russian metal was at its tightest, before falling back in anticipation of renewed shipments, to close on July 23 at \$415-\$417 per ounce. This level is still nearly \$40 per ounce higher than the platinum price at the end of 1996, and perhaps more important, the premium to gold has widened over the interval, from less than \$10 per ounce to more than \$80 per ounce. Similarly, palladium increased to a 17-year high of \$240 per ounce in mid-June, before closing at \$201-\$203 per ounce on July 23, but still more than \$50 per ounce higher than at the end of 1996 (Mining Journal, 1997c).

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- 1997b, China to keep gold reserves stable: Platt's Metals Week, v. 68, no. 33, August 18, p. 3.
- 1997c, Russia cuts gold credits to mining regions: Platt's Metals Week, v. 68, no. 36, September 8, p. 3.
- 1997d, SA mines reach productivity deal: Platt's Metals Week, v. 68, no. 35, September 1, p. 16.

TABLE 1  
MINE PRODUCTION OF RECOVERABLE GOLD AND SILVER IN THE UNITED STATES, BY STATE 1/

(Kilograms)

|                | Arizona | California | Montana | Nevada  | Other States 2/ | Total      |
|----------------|---------|------------|---------|---------|-----------------|------------|
| <b>Gold:</b>   |         |            |         |         |                 |            |
| 1996: p/       |         |            |         |         |                 |            |
| July           | 119     | 2,080      | 987     | 19,000  | 4,990           | 27,200     |
| August         | 158     | 1,880      | 1,010   | 19,300  | 5,250           | 27,600     |
| September      | 232     | 1,920      | 968     | 18,500  | 5,600           | 27,200     |
| October        | 223     | 1,920      | 1,140   | 19,100  | 5,330           | 27,800     |
| November       | 125     | 1,860      | 929     | 18,000  | 4,810           | 25,700     |
| December       | 124     | 1,980      | 876     | 19,800  | 5,210           | 28,000     |
| Jan.-Dec.      | 2,070   | 24,500     | 10,800  | 215,000 | 60,900          | 313,000    |
| 1997:          |         |            |         |         |                 |            |
| January        | W       | 1,840      | 733     | 18,200  | 5,270           | 26,100     |
| February       | W       | 1,840      | 754     | 16,100  | 5,110           | 23,800     |
| March          | W       | 1,890      | 767     | 20,000  | 4,990           | 27,700     |
| April          | W       | 1,890      | 714     | 18,500  | 5,400           | 26,500     |
| May            | 102     | 1,870      | 735     | 19,400  | 5,640           | 27,700     |
| June           | 79      | 1,810      | 685     | 20,100  | 5,100 r/        | 27,800 r/  |
| July           | W       | 1,830      | 743     | 20,300  | 5,330           | 28,200     |
| Jan.-July      | 181     | 13,000     | 5,130   | 133,000 | 36,800          | 188,000    |
|                | Arizona | California | Idaho   | Nevada  | Other States 3/ | Total      |
| <b>Silver:</b> |         |            |         |         |                 |            |
| 1996: p/       |         |            |         |         |                 |            |
| July           | 13,700  | 1,990      | 18,300  | 55,300  | 38,400          | 128,000    |
| August         | 13,600  | 1,470      | 18,600  | 53,900  | 45,800          | 133,000    |
| September      | 13,000  | 1,330      | 18,000  | 57,200  | 37,500          | 127,000    |
| October        | 12,500  | 1,450      | 18,600  | 67,700  | 35,800          | 136,000    |
| November       | 13,900  | 1,340      | 17,700  | 48,900  | 32,200          | 114,000    |
| December       | 14,100  | 1,250      | 17,800  | 58,300  | 34,800          | 126,000    |
| Jan.-Dec.      | 167,000 | 22,400     | 199,000 | 617,000 | 435,000         | 1,440,000  |
| 1997:          |         |            |         |         |                 |            |
| January        | 11,200  | 1,120      | 18,200  | 64,600  | 35,200          | 130,000    |
| February       | 10,300  | 1,090      | 17,400  | 46,200  | 36,400          | 111,000    |
| March          | 14,700  | 1,370      | 18,000  | 61,700  | 30,100 r/       | 126,000    |
| April          | 12,600  | 1,670      | 18,100  | 58,100  | 36,600 r/       | 127,000    |
| May            | 13,500  | 1,440      | 18,100  | 47,000  | 41,300 r/       | 121,000 r/ |
| June           | 14,600  | 1,280      | 18,100  | 60,900  | 35,400 r/       | 130,000    |
| July           | 13,500  | 1,350      | 18,100  | 58,900  | 32,100          | 124,000    |
| Jan.-July      | 90,500  | 9,340      | 126,000 | 397,000 | 247,000         | 871,000    |

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other States."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes Alaska, Colorado, Idaho, New Mexico, South Carolina, South Dakota, Utah, Wisconsin, and State indicated by symbol "W."

3/ Includes Alaska, Colorado, Michigan, Missouri, Montana, New Mexico, New York, South Carolina, South Dakota, Utah, Wisconsin, and State indicated by symbol "W."

TABLE 2  
SELECTED PRECIOUS METAL PRICES

(Dollars per troy ounce)

|                       | Gold             | Silver         | Platinum              | Palladium |
|-----------------------|------------------|----------------|-----------------------|-----------|
| Engelhard Industries: |                  |                |                       |           |
| 1996:                 |                  |                |                       |           |
| Low/date              | 368.67 (Dec. 03) | 4.67 (Dec. 03) | 368.00 (Dec.16)       | 117.00    |
| High/date             | 391.06 (Aug. 05) | 5.82 (Feb. 02) | 433.00 (Feb. 05)      | 146.00    |
| Average               | 389.08           | 5.20           | 397.97                | 130.39    |
| 1997:                 |                  |                |                       |           |
| June:                 |                  |                |                       |           |
| Low/date              | 335.77/30        | 4.65/30        | 403.00/02             | 177.00    |
| High/date             | 345.49/09        | 4.82/06        | 490.00/09             | 245.00    |
| Average               | 341.98           | 4.74           | 432.52                | 209.47    |
| July:                 |                  |                |                       |           |
| Low/date              | 318.49/09        | 4.22/17        | 405.00/15             | 178.00    |
| High/date             | 334.92/01        | 4.65/02        | 436.00/01             | 219.00    |
| Average               | 324.88           | 4.35           | 415.52                | 195.61    |
| August:               |                  |                |                       |           |
| Low/date              | 320.54/06        | 4.35/05        | 406.00/27             | 200.00    |
| High/date             | 328.91/11        | 4.79/29        | 453.00/05             | 246.00    |
| Average               | 325.24           | 4.52           | 426.23                | 221.57    |
| Year to date:         |                  |                |                       |           |
| Low/date              | 318.49 (July 09) | 4.22 (July 08) | 403.00 (June 02)      | 177.00    |
| High/date             | 367.82 (Jan. 01) | 5.30 (Mar. 14) | 490.00 (June 06 & 09) | 245.00    |
| Average               | 342.50           | 4.78           | 392.85                | 171.87    |
| Handy and Harman:     |                  |                |                       |           |
| 1996:                 |                  |                |                       |           |
| Average               | 387.81           | 5.18           | XX                    | XX        |
| 1997:                 |                  |                |                       |           |
| June                  | 340.75           | 4.74           | XX                    | XX        |
| July                  | 324.08           | 4.35           | XX                    | XX        |
| August                | 324.03           | 4.51           | XX                    | XX        |
| Year to date          | 341.32           | 4.77           | XX                    | XX        |
| London Final:         |                  |                |                       |           |
| 1996:                 |                  |                |                       |           |
| Average               | 387.70           | 5.20           | XX                    | XX        |
| 1997:                 |                  |                |                       |           |
| June                  | 340.75           | 4.75           | XX                    | XX        |
| July                  | 324.10           | 4.36           | XX                    | XX        |
| August                | 324.01           | 4.49           | XX                    | XX        |
| Year to date          | 341.41           | 4.77           | XX                    | XX        |

XX Not applicable.

Source: Platt's Metals Week.

TABLE 3  
U.S. IMPORTS AND EXPORTS OF GOLD, BY COUNTRY 1/

(Kilograms of gold content, unless otherwise specified)

| Country                         | Ores and concentrates 2/ | Dore and precipitates | Refined bullion 3/ | Total   | Waste and scrap 4/ (gross weight) |
|---------------------------------|--------------------------|-----------------------|--------------------|---------|-----------------------------------|
| <b>Imports for consumption:</b> |                          |                       |                    |         |                                   |
| 1996                            | 3,460                    | 11,900                | 143,000            | 159,000 | 13,000                            |
| 1997:                           |                          |                       |                    |         |                                   |
| April                           | 167                      | 877                   | 19,900             | 20,900  | 917                               |
| May                             | 38                       | 1,880                 | 17,100             | 19,100  | 1,080                             |
| June:                           |                          |                       |                    |         |                                   |
| Australia                       | 247                      | --                    | --                 | 247     | --                                |
| Brazil                          | --                       | --                    | 2,460              | 2,460   | --                                |
| Canada                          | 4                        | 2                     | 3,470              | 3,470   | 136                               |
| Chile                           | --                       | --                    | 350                | 350     | --                                |
| Colombia                        | --                       | --                    | 675                | 675     | --                                |
| Dominican Republic              | --                       | --                    | 30                 | 30      | 570                               |
| Mexico                          | 94                       | 647                   | 164                | 905     | 221                               |
| Netherlands Antilles            | --                       | --                    | 399                | 399     | 28                                |
| Peru                            | --                       | --                    | 458                | 458     | 3                                 |
| Switzerland                     | --                       | --                    | 2,880              | 2,880   | --                                |
| Uruguay                         | --                       | --                    | 341                | 341     | --                                |
| Other                           | --                       | 13                    | 1,060              | 1,070   | 478                               |
| Total                           | 345                      | 662                   | 12,300             | 13,300  | 1,440                             |
| Year to date                    | 1,220                    | 7,650                 | 101,000            | 110,000 | 6,030                             |
| <b>Exports:</b>                 |                          |                       |                    |         |                                   |
| 1996                            | 374                      | 65,100                | 406,000            | 471,000 | 89,900                            |
| 1997:                           |                          |                       |                    |         |                                   |
| April                           | 8                        | 5,790                 | 71,300             | 77,100  | 4,870                             |
| May                             | --                       | 5,550                 | 47,200             | 52,700  | 5,130                             |
| June:                           |                          |                       |                    |         |                                   |
| Canada                          | --                       | 447                   | 3,190              | 3,630   | 2,840                             |
| France                          | --                       | --                    | --                 | --      | 1,260                             |
| Germany                         | 4                        | --                    | 964                | 968     | 181                               |
| Hong Kong                       | --                       | --                    | 820                | 820     | --                                |
| Korea, Republic of              | --                       | --                    | 1,020              | 1,020   | --                                |
| Mexico                          | --                       | --                    | 913                | 913     | --                                |
| Switzerland                     | --                       | 4,060                 | 44,300             | 48,300  | --                                |
| Taiwan                          | 2                        | --                    | 501                | 503     | --                                |
| United Kingdom                  | --                       | 1,490                 | 5,530              | 7,020   | 414                               |
| Other                           | --                       | 3                     | 203                | 206     | 206                               |
| Total                           | --                       | 5,990                 | 57,400             | 63,400  | 4,900                             |
| Year to date                    | 189                      | 32,300                | 291,000            | 324,000 | 29,100                            |

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes gold content of base metal ores, concentrates, and matte imported for refining.

3/ Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

4/ "Waste and scrap" not included in "Total."

Source: Bureau of the Census.

TABLE 4  
U.S. IMPORTS AND EXPORTS OF SILVER, BY COUNTRY 1/

(Kilograms of silver content, unless otherwise specified)

| Country                  | Ores and concentrates 2/ | Dore and precipitates | Refined bullion | Total     | Waste and scrap 3/ (gross weight) |
|--------------------------|--------------------------|-----------------------|-----------------|-----------|-----------------------------------|
| Imports for consumption: |                          |                       |                 |           |                                   |
| 1996                     | 153,000                  | 281,000               | 2,580,000       | 3,010,000 | 1,810,000                         |
| 1997:                    |                          |                       |                 |           |                                   |
| April                    | 17,300                   | 28,200                | 197,000         | 242,000   | 87,800                            |
| May                      | 8,210                    | 43,600                | 119,000         | 171,000   | 176,000                           |
| June:                    |                          |                       |                 |           |                                   |
| Australia                | 1,130                    | --                    | --              | 1,130     | 17                                |
| Canada                   | 48                       | 19 4/                 | 56,800          | 56,900    | 32,000                            |
| Chile                    | --                       | 21,200 4/             | --              | 21,200    | 215                               |
| Dominican Republic       | --                       | --                    | --              | --        | 79                                |
| Germany                  | --                       | --                    | --              | --        | 40,300                            |
| Honduras                 | --                       | --                    | --              | --        | 1,340                             |
| Malaysia                 | --                       | --                    | --              | --        | 35,200                            |
| Mexico                   | 20,100                   | 616                   | 103,000         | 123,000   | 143                               |
| Netherlands              | --                       | --                    | --              | --        | 19,500                            |
| Peru                     | --                       | --                    | 29,800          | 29,800    | --                                |
| Philippines              | --                       | --                    | --              | --        | 59                                |
| Portugal                 | --                       | --                    | --              | --        | 23,900                            |
| Russia                   | --                       | --                    | --              | --        | 10,300                            |
| United Kingdom           | --                       | --                    | --              | --        | 20,000                            |
| Other                    | --                       | 98                    | --              | 98        | 102                               |
| Total                    | 21,200                   | 21,900                | 189,000         | 233,000   | 183,000                           |
| Year to date             | 69,900                   | 179,000               | 1,010,000       | 1,260,000 | 796,000                           |
| Exports:                 |                          |                       |                 |           |                                   |
| 1996                     | 1,520 r/                 | 43,300                | 2,900,000 5/    | 2,950,000 | 1,280,000                         |
| 1997:                    |                          |                       |                 |           |                                   |
| April                    | 4,110                    | 7,830                 | 40,500          | 52,500    | 59,800                            |
| May                      | --                       | 6,280                 | 434,000         | 305,000   | 94,000                            |
| June:                    |                          |                       |                 |           |                                   |
| Belgium                  | --                       | --                    | --              | --        | 9,280                             |
| Canada                   | --                       | --                    | --              | --        | 35,700                            |
| China                    | --                       | 80                    | --              | 80        | 3,180                             |
| France                   | --                       | --                    | --              | --        | 724                               |
| Germany                  | --                       | --                    | --              | --        | 3,790                             |
| Japan                    | --                       | --                    | 17,700          | 17,700    | 12,200                            |
| Korea, Republic of       | --                       | --                    | 17,000          | 17,000    | 6                                 |
| Sweden                   | --                       | --                    | --              | --        | 1,600                             |
| Switzerland              | --                       | 345                   | 165,000         | 165,000   | --                                |
| Taiwan                   | --                       | 5,190                 | --              | 5,190     | --                                |
| United Arab Emirates     | --                       | --                    | 121,000         | 121,000   | --                                |
| United Kingdom           | --                       | 860                   | 620,000         | 621,000   | 11,700                            |
| Other                    | --                       | --                    | --              | --        | 45                                |
| Total                    | --                       | 6,470                 | 941,000         | 947,000   | 78,200                            |
| Year to date             | 15,800                   | 44,700                | 1,370,000       | 1,440,000 | 482,000                           |

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes silver content of base metal ores, concentrates, and matte imported for refining.

3/ "Waste and scrap" not included in "Total."

4/ All or part of these data have been referred to the Bureau of the Census for verification.

5/ Verification of Bureau of the Census exports was not possible for some months of 1996.

Source: Bureau of the Census.

TABLE 5  
U.S. IMPORTS AND EXPORTS OF PLATINUM-GROUP METALS, BY COUNTRY 1/

(Kilograms of metal content, unless otherwise specified)

| Country                  | Ores and concentrates | Waste and scrap (gross weight) | Refined   |           |         |         |     | Osmium | Ruthenium |
|--------------------------|-----------------------|--------------------------------|-----------|-----------|---------|---------|-----|--------|-----------|
|                          |                       |                                | Platinum  | Palladium | Rhodium | Iridium |     |        |           |
| Imports for consumption: |                       |                                |           |           |         |         |     |        |           |
| 1996                     | 1,960                 | 5,060                          | 73,700 2/ | 146,000   | 9,650   | 1,810   | 329 | 15,600 |           |
| 1997:                    |                       |                                |           |           |         |         |     |        |           |
| April                    | --                    | 5390                           | 78,400    | 152,000   | 10,100  | 1,850   | --  | 16,600 |           |
| May                      | --                    | 595                            | 6,870     | 7,050     | 211     | 43      | --  | 5,780  |           |
| June:                    |                       |                                |           |           |         |         |     |        |           |
| Belgium                  | --                    | --                             | 508       | 2,300     | 3       | --      | --  | --     |           |
| Canada                   | --                    | --                             | 218       | 87        | --      | --      | --  | --     |           |
| China                    | --                    | --                             | --        | 405       | --      | --      | --  | --     |           |
| Germany                  | --                    | 102                            | 161       | 404       | 21      | --      | --  | --     |           |
| Japan                    | --                    | --                             | --        | 856       | 21      | --      | --  | --     |           |
| Mexico                   | --                    | --                             | --        | --        | --      | --      | --  | --     |           |
| Norway                   | --                    | --                             | 16        | 183       | --      | --      | --  | --     |           |
| Russia                   | --                    | --                             | 28        | 944       | --      | --      | --  | --     |           |
| South Africa             | --                    | --                             | 4,190     | 1,180     | 573     | 27      | --  | 235    |           |
| Switzerland              | --                    | --                             | 305       | 626       | --      | --      | --  | 57     |           |
| United Kingdom           | --                    | 359                            | 389       | 1,150     | 10      | 34      | --  | 1      |           |
| Other                    | --                    | 130                            | 9         | 106       | --      | --      | --  | --     |           |
| Total                    | --                    | 591                            | 5,820     | 8,240     | 628     | 61      | --  | 293    |           |
| Year to date             | --                    | 2,620                          | 37,800    | 47,800    | 3,540   | 688     | 18  | 6,070  |           |
| Exports:                 |                       |                                |           |           |         |         |     |        |           |
| 1996                     | 484                   | 8,640                          | 12,700    | 26,700    | 196     | 123 3/  |     |        |           |
| 1997:                    |                       |                                |           |           |         |         |     |        |           |
| April                    | 116                   | 752                            | 2,700     | 3,720     | 9       | 11 3/   |     |        |           |
| May                      | 21                    | 1,300                          | 1,260     | 4,960     | 2       | 355 3/  |     |        |           |
| June:                    |                       |                                |           |           |         |         |     |        |           |
| Belgium                  | --                    | 261                            | 609       | 829       | --      | --      |     |        |           |
| Canada                   | 1                     | 596                            | 34        | 95        | --      | --      |     |        |           |
| France                   | --                    | --                             | --        | 8         | --      | --      |     |        |           |
| Germany                  | 43                    | 320                            | 81        | 168       | --      | --      |     |        |           |
| Hong Kong                | --                    | --                             | 155       | 2         | 1       | --      |     |        |           |
| Ireland                  | --                    | --                             | --        | --        | --      | --      |     |        |           |
| Italy                    | --                    | --                             | --        | --        | --      | 5 3/    |     |        |           |
| Japan                    | --                    | 101                            | 20        | --        | --      | 6 3/    |     |        |           |
| Korea, Republic of       | 1                     | --                             | --        | --        | 33      | --      |     |        |           |
| Mexico                   | --                    | --                             | 3         | 1,100     | --      | --      |     |        |           |
| Netherlands              | --                    | --                             | --        | 180       | --      | --      |     |        |           |
| South Africa             | --                    | --                             | --        | 400       | --      | --      |     |        |           |
| Switzerland              | 5                     | --                             | 1,630     | 707       | 19      | 2 3/    |     |        |           |
| Taiwan                   | --                    | --                             | 12        | 376       | --      | --      |     |        |           |
| United Kingdom           | --                    | 445                            | 165       | 295       | 1       | 19 3/   |     |        |           |
| Other                    | --                    | 5                              | 196       | 1,160     | --      | --      |     |        |           |
| Total                    | 50                    | 1,730                          | 2,900     | 5,320     | 54      | 32 3/   |     |        |           |
| Year to date             | 424                   | 6,440                          | 10,300    | 23,600    | 78      | 441 3/  |     |        |           |

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Of this amount, 2,070 kilograms was in the form of platinum coins.

3/ Includes osmium and ruthenium.

Source: Bureau of the Census.